

The above-mentioned foundation of the œsophagus is not indicated at all in *Ammocetes*. It must not be confounded with the fold which hangs down from the dorsal median line into the branchial cavity of *Ammocetes*.

One of the first processes of the metamorphosis must be the formation of the tongue; in both my specimens it was already formed, whilst the œsophagus was only permeable for a few millimetres, and the mouth still possessed the narrow opening figured by Von Siebold (*Süsswasserfische von Mitteleuropa*, p. 381).—*Oberhessischen Gesellschaft für Natur- und Heilkunde*, January 11, 1873.

*On the Parasites of the Cetaceans of the N.W. Coast of America, with Descriptions of New Forms.* By W. H. DALL, U. S. Coast Survey.

Among the parasites most widely known as infesting the Cetacea, two classes may be recognized, viz. those which are true parasites, deriving their subsistence from the animal upon which they are found, such as the Pycnogonoids and *Cyami*; and those which are merely sessile upon the animal, and derive no nourishment or other benefit from it which might not equally well be furnished by an inanimate object, such as the various Cirripedes.

No Pycnogonoids have yet been reported from the Cetacea of this coast. Brief descriptions of the species of *Cyamus* found upon the California grey, the humpback, and the Arctic bowhead whales were submitted by me to the Academy at a recent meeting. I may here add to those descriptions a few facts since obtained, and bearing upon the species described. I have, through the courtesy of Capt. Scammon, been able to examine a large number of *Cyami* obtained at Monterey, Cal., from the humpback (*Megaptera versabilis*, Cope). They are all of the same species as that (*C. suffusus*) described by me as parasitic upon that whale—a fact which tends to confirm the hypothesis that each species of whale has its own peculiar parasites, and that there is rarely more than one species of *Cyamus* found upon one animal. The females, which were unknown at the date of my description, now prove to resemble the male in every respect, except in regard to the sexual organs, and in being a trifle more slender in form.

Among the Cirripedes, *Tubicinella* has not been reported from these waters, nor is the *Chelonobia* known to have been obtained from any of the whales of this coast. The genera known from the north Pacific waters are *Coronula*, an allied form which I believe to be uncharacterized, and *Otion* or a closely allied form.

#### SESSILIA.

##### CORONULA, Lam.

*Coronula*, Lamk. An. s. Vert. v. p. 387.

*Coronula balenaris*, Linn. sp.; Lamk. Ann. du Mus. i. p. 468, pl. 30. figs. 2-4.

This species, or one very closely allied to it, was obtained by the late Mr. Bridges, probably from the coast of Central America; but the identification of the exact locality and the species of cetacean

from which it was obtained was prevented by the premature and lamented decease of that energetic field naturalist.

✱ *Coronula diadema?*, Lamk.

It is quite possible that the species here indicated under the above name may be distinct from the true Atlantic *diadema*; but materials for exact comparison are wanting, and the figures given by Reeve and others very closely resemble the form before me. The radiating ridges are six in each group, often slightly bifurcated at their bases, and strongly sculptured with transverse, fluctuating, slightly elevated beaded lines. The interspaces are sharply transversely grooved. The superior membranous surface is brown, the pallium or hood surrounding the cirri is slightly purplish. The scuta are subtriangular, with the posterior prolongation longest, slightly keeled above, with sharply pointed adjacent umbones at the anterior angle of the ocludent margin. No vestiges of the terga are present. Adult specimens are over two inches in diameter at the base. In such a specimen the dimensions of the scuta are as follows:—length of ocludent margin .215 in., posterior margin (slightly arcuated) .28 in., anterior margin .175 in. Colour of scuta white; concave below, stout, solid. This species has been obtained from the humpback whale (*M. versabilis*) from Behring Strait to the Gulf of California, and may also be found on other species. It is especially abundant on the flippers and on the under lip of these animals.

CRYPTOLEPAS, n. g.

Scuta and terga both present, minute; valves six; externally produced below the surface of the whale's skin in thin radiating laminae, with their planes perpendicular to the vertical axis of the animal, and bifurcating and enlarged toward their distal edges. Parasitic on Cetacea.

Type *Cryptolepas rhachianectis*, Dall, n. sp.

Valves subequal, rostrum radiate, not alate. Lateral valves anteriorly alate, posteriorly radiate; earina alate, not radiate. Each valve internally transversely deeply grooved, and furnished externally with six radiating laminae vertically sharply grooved, the adjacent terminal laminae of each two valves coalescing to form one lamina of extra thickness; all the laminae bifurcated and thickened toward their outer edges, with two or more short spurs on each side, irregularly placed between the shell-wall and the bifurcation. Superior terminations of the valves (bluntly pointed?) usually abraded, transversely striate. Scuta subquadrate, adjacent anteriorly, very slightly beaked in the middle of the ocludent margin; terga subquadrate, small, separated from the scuta by intervening membrane; both very small in proportion to the orifice. Membranes very thin and delicate, raised into small lamellae between the opercular valves. All the calcareous matter pulverulent, and showing a strong tendency to split up into laminae. Antero-posterior diameter of large specimen 1.62 in., ditto of orifice .63 in.; transverse diameter of orifice .58 in.; length of scuta .17 in., breadth .08 in.; length of terga .07 in., breadth

·07 in. Colour of membranes, when living, sulphur-yellow ; hood extremely protrusile.

This species is found sessile on the California grey whale (*Rhachianectes glaucus*, Cope). I have observed them on specimens of that species hauled up on the beach at Monterey for cutting off the blubber, in the bay-whaling of that locality. The superior surface of the lateral laminae being covered by the black skin of the whale, was not visible ; and the animal, removed from its native element, protruding its bright yellow hood in every direction to a surprising distance, as if gasping for breath, presented a truly singular appearance.

PEDUNCULATA.

OTION, Leach.

*Otion*, Leach, *Encycl. Britannica*, suppl. vol. iii. p. 170.

*Otion Stimpsoni*, Dall, n. sp.

Scuta only present, beaked, with the umbones on the ocludent margins ; anterior prolongation the longer, pointed, rather slender ; posterior prolongation rounded, wider ; external margin concave. Colour (in spirits) light orange with a dark purple streak on the rostral surface and on each side of the peduncle, while the lateral surfaces of the body-case and lobes are mottled with dark purple. The lower lip of the orifice is transversely striated and translucent, the upper margins, slightly reflexed internally, white ; in some specimens with two prolongations or small lobes above, which are wanting in other specimens. The tubular prolongations very irregular and variable in size and form, usually unsymmetrical ; one sometimes nearly abortive. Length of peduncle 2·8 in., of body 2·16 in., of lobes 2·0 in., of orifice 1·18 in., of scuta ·55 in. ; width of scuta ·16 in.

*Hab.* On the "humpback" (*M. versabilis*), sessile on the *Coronula* which infest that species, but never, so far as I have observed, on the surface of the whale itself.

Dr. Leach describes five calcareous pieces, namely the scuta, terga, and rostrum, in the typical species (*O. Cuvieri*, Leach) ; and they are figured by Reeve ; but this species has certainly only the scuta. Whether this difference is of more than specific value I am not able to decide, owing to the great paucity of works of reference here. I should be unwilling to describe the species, were it not that it was submitted to the late lamented Dr. Stimpson for examination, and was pronounced by him to be new.

A variety, or perhaps another form, was observed by me in Behring Strait in 1865, which was blotched all over with rose-pink, and had the scuta narrower and more slender ; it was also smaller than the specimens before me ; but as it is not at hand, I am unable to decide with certainty.

I am indebted to Capt. C. M. Scammon and R. E. C. Stearns, Esq., for specimens and facilities furnished in the preparation of this paper. Most of the specimens were collected by the former gentleman, and will be figured in his forthcoming monograph of the Cetaceans of the N.W. Coast.—*Proceedings of the California Academy of Sciences*, Dec. 18, 1872.